

We Claim:

1. An improved catalytic process for the preparation of epoxides from alkenes, said process comprises the steps of:
 - a. reacting an alkenes in a concentration range of 0.001 mol to 10 mol optionally in presence of a transition metal salt in a concentration range of 0.01 mmol to 0.01 mol combination with an inorganic base in a concentration range of 0.0003 mol to 4.0 mol and an organic compound in a concentration range 0.02 mol to 30.0 mol as catalyst under biphasic homogeneous system and continuous stirring with hydrogen peroxide as a source of oxygen over a time period 2 to 10 hr at a temperature range of -10^0 to 80^0 °C to obtain reaction mixture with a conversion of >99% and 95% selectivity, and
 - b. separating the epoxides from aqueous layer of the reaction mixture, by layer separation method after about 15 h alternatively by solvent extraction method in case of partially water soluble/solid epoxides .
2. An improved catalytic process as claimed in claim 1, wherein alkenes used is selected from the group comprising styrene, indene, cyclohexene, 1,2 dihydronaphthalene, isoprene, α -pinene, 1-hexene, 1-octene and *t*-4-octene.
3. An improved catalytic process as claimed in claims 1, wherein transition metal salt used is selected from the group consisting of cobalt, manganese, nickel, copper, iron, chromium and vanadium while the counter ion like chloride, bromide, iodide, carbonate, bi-carbonate, perchlorate, sulphate, nitrate, acetate, phosphate.

4. An improved catalytic process as claimed in claims 1, wherein solvent used is selected from the group consisting of benzene, fluorene, chlorobenzene, nitrobenzene, 1,4-dioxane acetonitrile, benzonitrile, formamide, acetamide, propamide, dimethylformamide, dimethylacetamide, dichloromethane and dichloroethane in combination of water 2:3 v/v.
5. An improved catalytic process as claimed in claims 1, the inorganic promoter used are carbonates and bicarbonates of alkali metals like lithium, sodium, potassium and cesium.
6. An improved catalytic process as claimed in claims 1, wherein an organic additive used is selected from the group consisting of acetonitrile, benzonitrile, formamide, acetamide, propamide, dimethylformamide, dimethylacetamide, urea, alkyl substituted urea, aryl substituted urea and thio-urea.
7. An improved catalytic process as claimed in claims 1, wherein the concentration of hydrogen peroxide was maintained in the range of 5% to 55%.
8. An improved catalytic process as claimed in claims 1, wherein the aging period of the reaction mixture was maintained in the range of 3 to 15 h.